

Reply to October 3, 2003 Office Action  
Applicant : Hendrik Sibolt van Damme, et al.  
Serial No. : 09/845,198  
Filed : May 1, 2001  
Page 2 of 8

### Claim Amendments

1-28 (canceled)

29 (currently amended): A method for the detection of an analyte in a sample, the method comprising the steps of

a) contacting the sample with a device according to claim 17, comprising a substrate having through-going channels, the channels opening out on a surface for sample application, the channels in at least one area of the surface for sample application being provided with a binding substance capable of binding to an analyte, wherein the binding substance is within the through-going channels in the substrate;

b) allowing binding to take place between the first binding substance and the analyte to be detected, and passing the sample back and forth through the membrane; and

c) detecting whether binding has occurred between the first binding substance and the analyte.

30 (currently amended): The method of claim 29, wherein the analyte comprises a nucleic acid, an antibody, an antigen, a receptor, a hapten or a ligand for a receptor.

31 (currently amended): The method of claim 30, wherein the analyte nucleic acid is derivable from a human immunodeficiency virus.

32 (new): The method of claim 29, wherein, after step b) but before step c), the sample is again passed back and forth through the membrane in a manner sufficient to allow binding to take place between the binding substance and the analyte to be

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Page 3 of 8

detected.

33 (new): The method of claim 29, wherein the substrate is an electrochemically manufactured metal oxide membrane and the binding substance is covalently bound to the substrate.

34 (new): The method of claim 33, wherein the metal oxide membrane is comprised of aluminum oxide.

35 (new): The method of claim 29, wherein the substrate is an electrochemically manufactured metal oxide membrane and the binding substance is not covalently bound to the substrate.

36. (new): The method of claim 35, wherein the metal oxide membrane is comprised of aluminum oxide.

37 (new): The method of claim 29, wherein the binding substance is synthesized in situ.

38 (new): The method of claim 37, wherein a compound for synthesizing the binding substance is applied to a particular area using ink-jet technology.

39 (new): The method of claim 38, wherein the compound is applied using electrostatic attraction.

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Page 4 of 8

40 (new): The method of claim 29, wherein the binding substance is applied to a particular area using ink-jet technology.

41 (new): The method of claim 40, wherein the binding substance is applied using electrostatic attraction.

42 (new): The method of claim 29, further comprising using the results of step d) to determine sequence information of the nucleic acid.

43 (new): The method of claim 29, wherein the binding substance is an oligonucleotide.

44 (new): The method of claim 29, wherein the binding substance is a sequence of amino acids.

45 (new): The method of claim 29, wherein the binding substance is an antibody.

46 (new): The method of claim 29, wherein the binding substance is an antigen.

47 (new): The method of claim 29, wherein the binding substance is a receptor or a ligand for a receptor.

48 (new): The method of claim 29, wherein the binding substance is a hapten.